

52
+
DART AEROSPACE LTDSPLIT
Work Order:

19665 B

Description: Aft Crosstube

Part Number:

D2890

Drawing: D2890 Rev. B; D6008 Rev. A

Qty:

14 5

Page 1 of 2

Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveller Dwg. not required RF 02.11.05	HJ	03.09.19	14
2	PG	Issue P/O: 2005608 a) Extrude as per Dwg D6008 length = 180" (Ref. D6008-180) b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11)) Seamless aluminum tube c) Minimum ultimate tensile strength = 77ksi d) Minimum tensile yield strength = 66ksi e) Material certification required	U	03.09.22	14
3	RG	Receive and inspect for transit damage Ensure material certification attached	Q	04.01.05	16
4	QC6	Inspect dimensions as per Dwg D6008 and check 180" length	B	04.01.13	16
5	FP	Acid etch and alodine as per QSI 005 4.1 Inside and outside of tube	M	04.01.13	16
6	LG	Bend as per Dwg D2890 and Folio FT002 Sign Page 2			
7	QC6	Inspect dimensions per Dwg D2890 Sign Page 2			
8	LG	Deburr and Polish Sign Page 2			
9	FP	Acid etch and alodine as per QSI 005 4.1 Inside and outside of tube Sign Page 2			
10	QC5	Inspect work to Step 9 Sign Page 2			
11	ST	Identify and stock	S	04/05/27	8 4
12	AC	Cost / part: 1005.38	SAC	04.06.01	4
13	DC	Close W/O 1032.53 Inspect Level 21	HJ	04.06.04	4

See
ATTACHED
SHEET
2
HJ.

Rev	Date	Change	Revised By	Approved
A	99.05.31	New Issue, ECN 200	DM	
B	00.04.11	Remove painting step	EC	
C	02.10.18	Re-format; Added spec	KJ RF	HJ

RELEASED
02/10/30 RF

DART AEROSPACE LTD		Work Order:	19665
Description: Aft Crosstube		Part Number:	D2890
Drawing: D2890 Rev. B; D6008 Rev. A		Qty:	14
		Page 2 of 2	

W/O Step	A	B	C	DE	ED	F	G	H	I	J	K	L
6	CP 04/05/19	CP 04/05/17	CP 04/05/18	CP 04/05/19	CP 04/05/19							
7	CP 04/05/19	CP 04/05/17	CP 04/05/18	CP 04/05/19	CP 04/05/19							
8	CP 04/05/19	CP 04/05/18	CP 04-05-19	CP 04-05-19	CP 04-05-19							
9	CP 04/05/19	CP 04/05/20	CP 04/05/20	CP 04/05/20	CP 04/05/20							
10	CP 04/05/19	CP 04/05/20	CP 04/05/20	CP 04/05/20	CP 04/05/20							

→ OVERBENT BY 1" UNACCEPTABLE. ADDING 4 GIVE TO GIVE FOR DEVIATION.
 → INCHES 49" WORN = 139.25 INSTEAD OF 138.65 TO 139.05 OK 04-05-19
 → INCHES 50" WORN = 139.12 INSTEAD OF 138.65 TO 139.05 OK 04-05-18
 → INCHES 49" WORN = 139.25 INSTEAD OF 138.65 TO 139.05 OK 04-05-17
 → INCHES 49" WORN = 139.16 INSTEAD OF 138.65 TO 139.05 OK 04-05-14

RELEASED
02/10/30

NCE - N/A. J.A.

Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 I Certificat de Reception 3.1 B - EN 10204

Kunde:

Client:

Dart Aerospace Ltd.

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Produkt:

Product / Produit:

Tubes seamless extruded

Spezifikation:

Specification:

QQA 200/11e, Tol. Acc to ASTM B 210

Werkstoff:

Alloy/Alliage:

7075

Abmessung

Size / Dimension

82,550 mm x 60,290 mm x 11,130 mm x 4572,00 mm

Article D6008-180 3.250" x 0.438"

Kennzeichnung

Marking/Marquage:

Cert No.404/03-AWU-7075-T6511-Cast No.1049-QQA-200/11E-3.250" OD X0.438"Wall-Heat.No.2974-Lot6438-2-
2P.O.-2005668

Lieferung:

Delivered Material / Matériel délivré:

pcs.

16

lbs

1146

Zeugnisnummer:

Cert No.: / No. du certificat:

Bestellnummer:

Order No. / No. de commande

Auftrag:

Our Reference/Notre Reference:

2005668

6438/2

Zustand:

Temper/État

T 6511

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
1049/03	0,124	0,239	1,361	0,057	2,372	0,192	5,683	0,037	0,004	0,0153	0,0001	0,0013	0,0030

Hydrogen content: 0,13 ccm/100 g Al

Elemente ohne Angabe < 0,01 % / Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Ksi	yield (Rp0,2) Ksi	elongation 2" %	elongation A %	Hardness HB
min.	77,0	66,0			
max.					
1	86,275	79,750	10,0		158
2	86,710	80,620	10,0		154

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Results:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande



ALUnna AG



ALUnna

delivery note

7620

page: 2
date: 28.11.2003
customer: 40980

Min. yield strength 66 ksi
Tubes protected with corrosion protective oil
Tubes line marked
Packing list, Inspection certificate
Packing: seaworthy wooden cases
number of packages: 1
number of pieces: 22

item	quantity	unit	net kgs
002	16,000	PC	

AWU article: 16539 / Customer article: D6008-180 3.250 x 0.438 x 180
/Tariff no. 76082091

product: TUBES / seamless extruded / EN AW-7075 / round

condition: T 6511 / QQA 200/11E

outer diameter:	3,250 INCH Tol.	+0,016	-0,016
tol. for mean OD		+0,008	-0,008
inner diameter:	2,374 INCH		
wall thickness:	0,438 INCH Tol.	+0,043	-0,043
fixed length	180,000 INCH Tol.	+0,125	

test report acc. to EN 10204/3.1B / RM 531 / Rp0,2: 455

straightness 0,01 INCH / 1 FEET / RMS outer 25

tol. on quantity +10 % -10 %

3.250" OD 0.438" Wall, 180" lengths

Part Number D6008-180 crosstube

Surface Finish max. RMS 25

Tolerances per ASTM B210

Straightness 0.010" deviation /12" length

Outside surface: max. defects up to 0.005" (longitudinally)

Min. ultimate tensile strength 77 ksi

Min. yield strength 66 ksi

Tubes protected with corrosion protective oil

Tubes line marked

Packing list, Inspection certificate

Packing: seaworthy wooden cases

number of packages: 1

number of pieces: 16

Terms of payment: 30 days after date of delivery

terms of delivery: DDP(Delivered,Duty,Paid)

weight:	gross	1321,000	net	1028,000
Packstücke	2			

delivery note

7620

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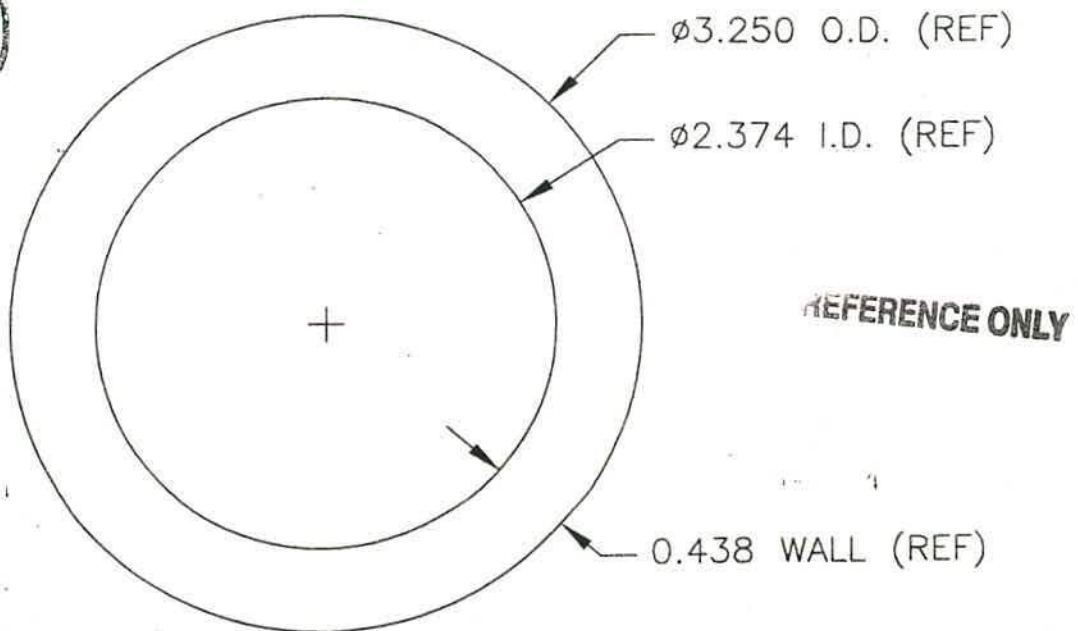
weight:	gross	1321,000	net	1028,000
Packstücke	2			



DESIGN CP	DRAWN BY CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D6008	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 [Signature]



NOTES

- 1) D6008-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 180" LONG TUBE: D6008-180

- 2) MATERIAL: 3.250 OD x 0.438 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.008 MEAN (± 0.016 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.044 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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